

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-080921

(43)Date of publication of application : 28.03.1995

(51)Int.Cl.

B29C 49/20
B29C 49/08
B65D 23/10
// B29K105:20
B29L 22:00

(21)Application number : 05-231376

(71)Applicant : TOPPAN PRINTING CO LTD

(22)Date of filing : 17.09.1993

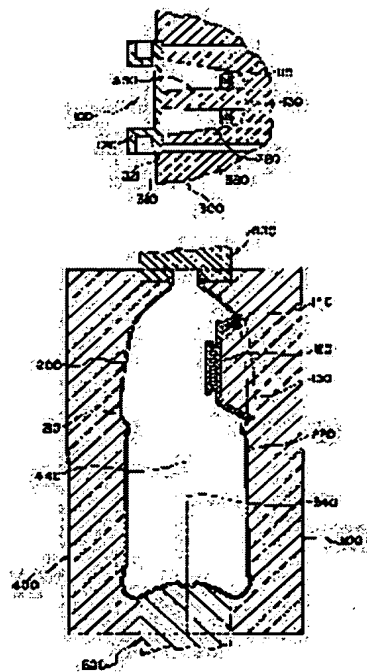
(72)Inventor : KAKIGI NORIKAZU
SAITO TAKASHI

(54) MANUFACTURE OF BIAXIALY ORIENTED BLOW MOLDED BOTTLE WITH HANDLE AND HANDLE

(57)Abstract:

PURPOSE: To make molding stability favorable at the time of mass production and a handle hard to come off at the time of use, by a method wherein a separate body handle possessing a fitting piece and a positioning hole is fitted to a handle fitting recessed part of a designated position of a cavity surface of a belly part mold by a positioning pin and position slip preventive recessed part and simultaneously with molding of a bolt main body integral molding is performed.

CONSTITUTION: A separate body handle 100 constituted of a fitting piece 120 fitting in a bolt main body, a handle part 110 possessing a positioning hole 130 through which a positioning pin of a mold is penetrated and a fitting projection 140 is made. The handle 100 is fitted to a handle fitting recessed part 320 which is provided on the center of the upper part of a cavity 310 of a rear side belly part mold 300 of a biaxially oriented blow mold and possessing a projecting positioning pin 330 and position slip preventive recessed part 321. Then the rear of a fitting piece 120 is supported by the tip of the positioning pin 330 and deformation by a blow pressure during molding is prevented from being generated. Then mold clamping is performed by suspending a heated preform in a neck part mold 500 and the preform is orientated in a longitudinal direction by an orientation rod.



LEGAL STATUS

[Date of request for examination] 08.06.2000

[Date of sending the examiner's decision of rejection] 10.06.2003

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

*** NOTICES ***

JPO and INPIT are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The manufacture approach of the bundle deposit biaxial-stretching-blow-molding bottle characterized by to equip a handle wearing crevice with the locator pin and the location gap prevention crevice where the drum-section metal-mold cavity side of biaxial-stretching-blow-molding metal mold projects the handle of another object which consists of a bundle hand part which has the tooling holes which the locator pin of the fitting child who attaches the handle of another object in the body of a bottle in the biaxial-stretching-blow-molding method which carries out insert molding, and metal mold penetrates in the body of a bottle, and to carry out the biaxial stretching blow molding of the body of a bottle the back.

[Claim 2] The handle characterized by having the fitting child who uses for the manufacture approach of a bundle deposit biaxial-stretching-blow-molding bottle according to claim 1, and who is attached in the body of a bottle, and a bundle hand part with the tooling holes which the gage pin of metal mold penetrates.

[Translation done.]

*** NOTICES ***

JPO and INPIT are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the manufacture approach of the bundle deposit biaxial-stretching-blow-molding bottle used for liquid contents, such as a fruit-juice drink, a liquid seasoning, liquid detergent, and a developer.

[0002]

[Description of the Prior Art] Recently, inner capacity also becomes large and its need of a bundle deposit bottle 1l. or more has been increasing as the bottle made from plastics expands applicability as a container of liquid contents. As an approach of attaching a handle to the bottle made from plastics What formed a part of bottle drum section in the crevice at the time of shaping of a bottle, and was made into the shape of a handle by the blow molding method from the former, What crushed and fabricated the parison (melting tubing-like molding material) of the handle inside, cut off the inside of this crushed handle, and formed the handle, or as indicated by JP,1-137831,U etc., form fitting heights in a bottle drum section, and a handle to the approach of carrying out a fitting stop, and a pan at these heights As indicated by JP,63-95931,A etc., it was what carries out contiguity maintenance of preforming (heated closed-end parison) and the handle of another object correctly beforehand, conveys both in a biaxial-stretching blow molding die simultaneously, and fabricates a bundle deposit biaxial-stretching-blow-molding bottle.

[0003]

[Problem(s) to be Solved by the Invention] However, the bottle which formed a part of bottle drum section in the crevice, and was made into the shape of a handle had the problem on which cannot have easily at the time of an activity, and a front face tends to slide. As for the bottle with a handle which crushed, fabricated and cut off the handle inside and formed the handle, having applied was impossible because of the welding imperfection of the pinch-off (the fused parison eating welding section of the rim of the end section) which is possible for the interior of constraint of the configuration of the fabricating method, and a handle with the bottle by the drawing prow fabricating method for having used polyethylene terephthalate etc. for construction material. Moreover, the approach of forming fitting heights in the bottle drum section indicated by JP,1-137831,U etc., and carrying out the fitting stop of the handle had the difficulty on shaping in forming the fitting heights of a bottle drum section firmly, and had a fear of a handle separating at the time of an activity. Moreover, in order that the approach of conveying simultaneously the handle of the parison indicated by JP,63-95931,A and another object in a biaxial-stretching blow molding die, and fabricating a bundle deposit biaxial-stretching-blow-molding bottle might make a parting line straddle a metal mold cavity side and might equip it with the handle of another object, it was what the remains of a parting line of a lengthwise direction remain in the transverse-plane side of the fabricated bottle, and spoils the appearance of a bottle. The shaping stability of this invention at the time of mass production is good, there is no fear of separating at the time of a handle activity, moreover, there are no remains of a parting line and an appearance provides a bottle transverse-plane side with the manufacture approach of a good bundle deposit biaxial-stretching-blow-molding bottle.

[0004]

[Means for Solving the Problem] In the biaxial-stretching-blow-molding method the 1st this

invention carries out insert molding of the handle of another object to the body of a bottle As shown in drawing 1 , as shown in drawing 2 , the handle (100) of another object which consists of a bundle hand part (110) with the tooling holes (130) which the gage pin of a fitting child (120) and metal mold attached in the body of a bottle penetrates As a handle wearing crevice (320) with the projecting gage pin (330) and location gap prevention crevice (shown in 321 and drawing 4) of the drum section metal mold (300) cavity side (310) of biaxial-stretching-blow-molding metal mold is equipped and it is shown in drawing 5 the back It is the manufacture approach of the bundle deposit biaxial-stretching-blow-molding bottle (200) characterized by carrying out biaxial stretching blow molding of the body (210) of a bottle.

[0005] The 2nd this invention is a handle characterized by having the fitting child who uses for the manufacture approach of the bundle deposit biaxial-stretching-blow-molding bottle of the 1st this invention, and who is attached in the body of a bottle, and a bundle hand part with the tooling holes which the gage pin of metal mold penetrates.

[0006] As shown in drawing 3 , above-mentioned biaxial-stretching-blow-molding metal mold (10) usually consists of the drum section metal mold (300,400) and cervix metal mold (500) which are divided into two, and pars-basilaris-ossis-occipitalis metal mold (600), and it hangs preforming (700) heated to cervix metal mold, and it is mold clamp carried out. Within the biaxial-stretching-blow-molding metal mold by which it was mold clamp carried out, after this preforming is extended by the lengthwise direction with a drawing lot, air is blown into preforming and it is fabricated by the bottle. In addition, the molding materials used for biaxial stretching blow molding are polyethylene terephthalate, acrylonitrile system resin, polypropylene, a polyvinyl chloride, a polyvinylidene chloride, etc.

[0007] Moreover, even if an inserter performs mechanically wearing to the handle wearing crevice of the drum section metal mold cavity side of the handle of another object, it is good in a line human by hand. And a vacuum hole (380) as shown in drawing 4 depending on a configuration on a knob may be prepared in the suitable location of a handle wearing crevice (320), and you may attract the handle of another object, and may also prevent a location gap of the handle at the time of shaping.

[0008] Moreover, although obtained by fitting of the peripheral wall of the body of a bottle, and a fitting child on a knob, every time the sticking tendency with the body of a bottle of the handle of another object accepts the need, it may prepare a fitting projection and the fitting section in the contact section with the peripheral wall of the body of a bottle of handles other than a fitting child. In addition, the fitting section with the peripheral wall of a fitting child's body of a bottle prepares only the need number in the four way type of a fitting child's four directions (where a handle is attached in a bottle).

[0009] And although the construction material of the body of a bottle and the resin of a same system are desirable when the collection after thermal melting arrival nature with the body of a bottle or an activity by type is taken into consideration, other construction material may be used for the construction material of the handle of another object.

[0010]

[Function] In the manufacture approach of the bundle deposit biaxial-stretching-blow-molding bottle of this invention, in order to attach the handle of another object in the gage pin of the handle wearing crevice in drum section metal mold, and a location gap prevention crevice, an exact location is equipped firmly, moreover, the tooth back of a fitting child on a knob is supported at the head of a gage pin, a location gap is produced at the time of shaping of the body of a bottle, or deforming by blow ** decreases extremely.

[0011] Moreover, the fitting child is formed in the peripheral wall side of the body of a bottle on a knob, and since the fitting section of the plurality of the direction of a four way type of this fitting child's four directions (in the condition of having attached the handle in the bottle), and the peripheral wall of the body of a bottle have fitted in firmly, a sticking tendency with the peripheral wall of the body of a bottle of the handle of another object becomes very good. For this reason, while using a bottle, a handle can separate from a bottle, or it can prevent being shaky.

[0012] Moreover, since the handle wearing crevice formed in the predetermined location of the cavity center section of drum section metal mold is equipped with the handle of another object and the body of a bottle is fabricated, when the marks of the parting line of the drum section metal mold

of the fabricated bundle deposit biaxial-stretching-blow-molding bottle make a bundle net income attachment side the rear-face side of a bottle, it is formed in the left and right laterals of a bottle drum section, and there are no marks of a parting line in the bottle drum section by the side of a front face. [0013]

[Example] First, in order to produce the handle of another object concerning this example, the handle (100) of another object which consists of a bundle hand part (110) with the tooling holes (130) which the gage pin of a fitting child (120) and metal mold attached in the body of a bottle shown in drawing 1 penetrates, and a fitting projection (140) was produced using polyethylene terephthalate with the injection making machine.

[0014] Next, as shown in drawing 2 (a), the handle wearing crevice (320) with the projecting gage pin (330) and location gap prevention crevice (shown in 321 and drawing 4) which were prepared in the center of the upper part of the cavity (310) of the rear-face side drum section metal mold (300) of biaxial-stretching-blow-molding metal mold was equipped with the handle (100) of produced another object as shown in drawing 2 (b). In addition, the vacuum hole (380) as further shown in drawing 4 was prepared in this handle wearing crevice, and it adsorbed so that a handle might not cause a location gap at the time of shaping. Moreover, a fitting child's (120) tooth back was supported at the head of a locator pin (130), and deformation by blow ** under shaping was prevented.

[0015] Next, as were shown in drawing 3 , and hung preforming heated to cervix metal mold, a mold clamp was performed, preforming was extended to a lengthwise direction with a drawing lot and it was shown in drawing 5 , blow molding of the body (210) of a bottle was carried out, and the bundle deposit biaxial-stretching-blow-molding bottle (200) was produced. In addition, although the bundle deposit biaxial-stretching-blow-molding bottle was continuously produced by the manufacture approach of the bundle deposit biaxial-stretching-blow-molding bottle of this this example, continuous-molding nature was good.

[0016] In order to evaluate the produced bundle deposit biaxial-stretching-blow-molding bottle, as warm water is filled up with the restoration temperature of 40-degreeC, pour opening is sealed with a cap and it is later shown in drawing 6 through the usual negotiation process after cooling Although inserted the right index finger (910), the middle finger (920), the third finger (930), and a digitus minimus (940) in the finger insertion crevice of the handle (100) of a bottle, and the handle is held with the thumb, and it shook with the bottle, or it unstopped and contents were discharged It fitted in firmly, and backlash was not produced on a handle and a fitting child's fitting section and bottle peripheral wall on a knob did not separate on it. Moreover, since there were no remains of a parting line formed at the time of shaping in the transverse-plane side of a bottle, the appearance of a bottle was good.

[0017]

[Effect of the Invention] According to the manufacture approach of the bundle deposit biaxial-stretching-blow-molding bottle of this invention, the handle of another object with a fitting child and tooling holes to the handle wearing crevice of the specified location of the cavity side of drum section metal mold in a gage pin and a location gap prevention crevice Since it is equipped firmly, is really fabricated by shaping of the body of a bottle, and coincidence and a bundle deposit biaxial-stretching-blow-molding bottle is manufactured, the bottle with which the shaping stability at the time of mass production was good with the bottle, and was moreover manufactured a fear of a handle separating at the time of an activity -- there is nothing -- a moreover and bottle transverse-plane side -- the remains of a parting line of drum section metal mold -- since -- an appearance is very good.

[Translation done.]

*** NOTICES ***

JPO and INPIT are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.

2. **** shows the word which can not be translated.

3. In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] (b) is a top view on a knob, (a) is the sectional view of the handle of an example and (d) is [(c) is a bottom view on a knob, and] an A-A' sectional view on a knob.

[Drawing 2] It is the top view of the biaxial-stretching-blow-molding metal mold by the side of bundle net income attachment in an example, and (a) shows the condition of having not equipped with the handle in metal mold, and (b) shows the condition when equipping the handle wearing crevice in metal mold with a handle.

[Drawing 3] It is the sectional view showing the condition of having equipped with preforming and the handle of another object in the biaxial-stretching-blow-molding metal mold in an example.

[Drawing 4] It is a B-B' sectional view in drawing 3.

[Drawing 5] It is the sectional view showing the condition of having carried out the drawing blow of the preforming within biaxial-stretching-blow-molding metal mold, and having fabricated the bundle deposit biaxial-stretching-blow-molding bottle of an example.

[Drawing 6] It is the explanatory view showing the condition of a right finger being put into the handle of the bundle deposit biaxial-stretching-blow-molding bottle of an example, and a bottle being inclined, and pouring out contents from a bottle.

[Description of Notations]

10 Biaxial-stretching-blow-molding metal mold

100 Handle

110 Bundle hand part

120 Fitting child

121,141 Fitting section

130 Tooling holes

140 Fitting projection

200 Bundle deposit biaxial-stretching-blow-molding bottle

210 Body of a bottle

220 Peripheral wall

230 The remains of a parting line

300,400 Drum section metal mold

310,410 Cavity

320 Handle wearing crevice

330 Gage pin

340,440 Parting surface

350 Cervix metal mold fitting crevice

360 Pars-basilaris-ossis-occipitalis metal mold fitting crevice

370 Guide pin

500 Cervix metal mold

600 Pars-basilaris-ossis-occipitalis metal mold

700 Preforming

800 Contents

910 Index finger

920 Middle finger

930 Third finger
940 Digitus minimus

[Translation done.]

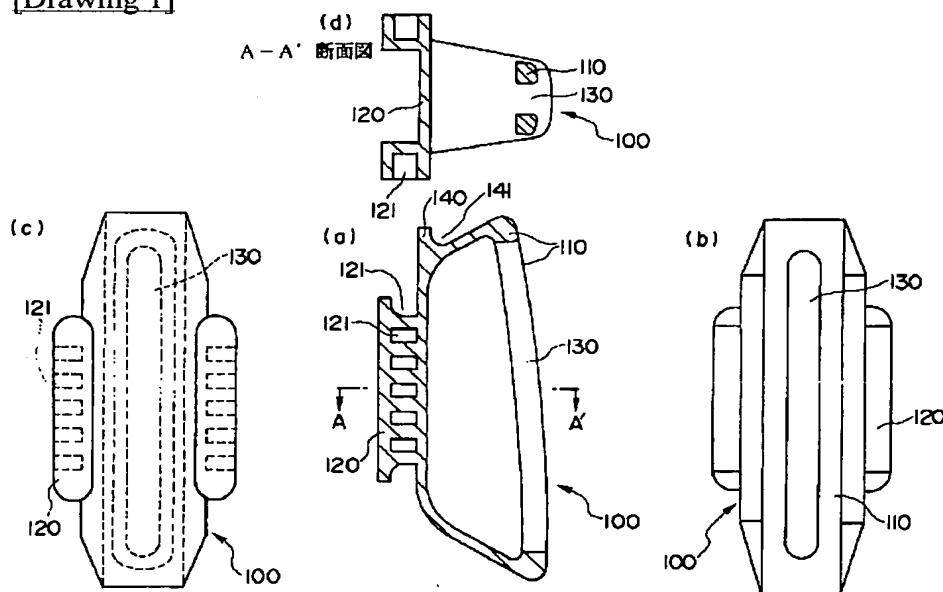
* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

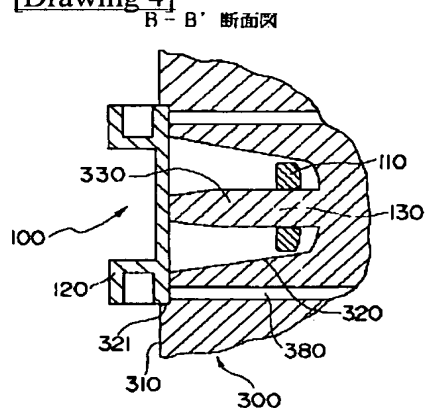
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

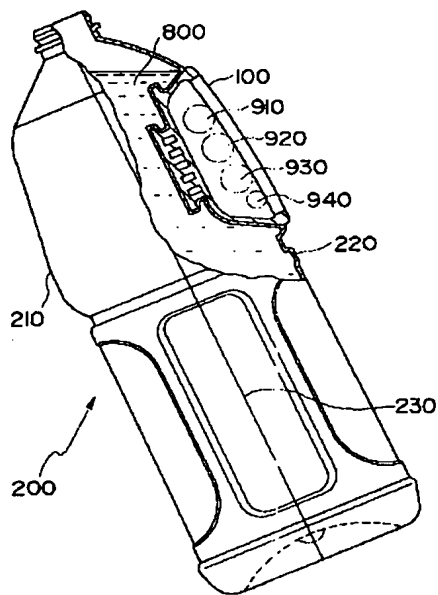
[Drawing 1]



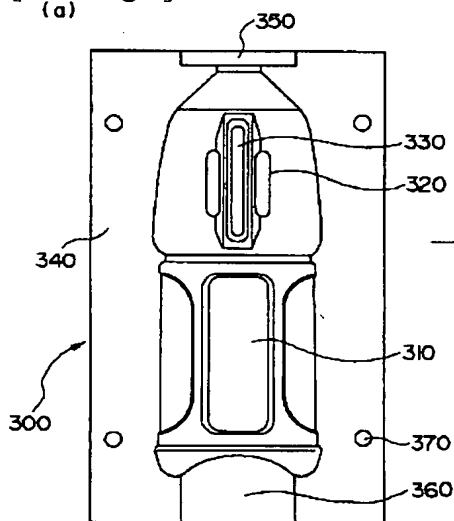
[Drawing 4]



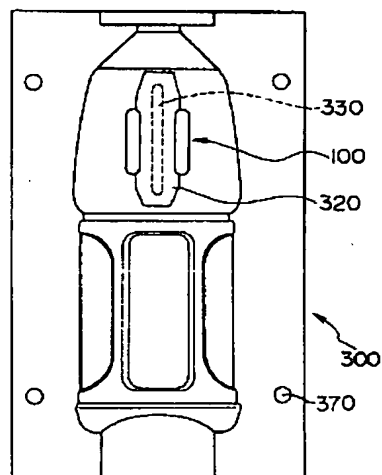
[Drawing 6]



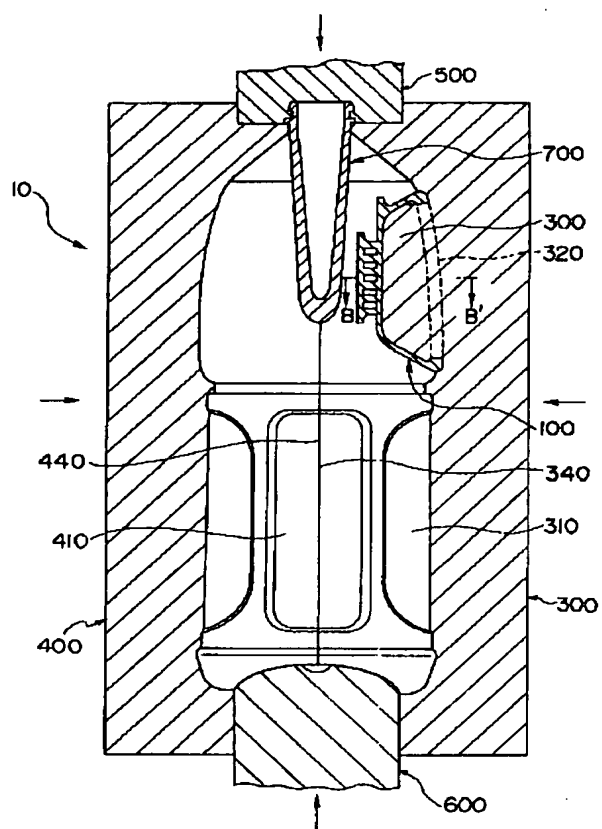
[Drawing 2]
(a)



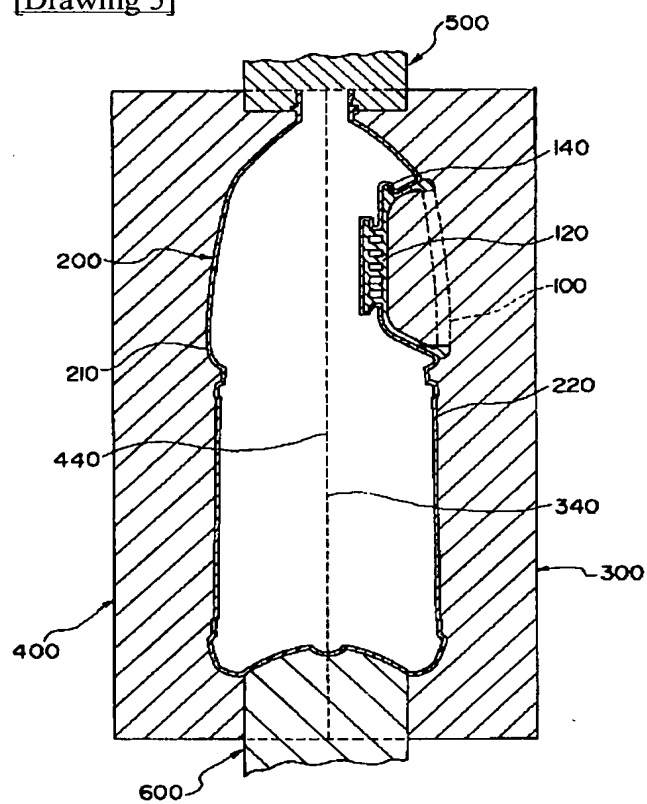
(b)



[Drawing 3]



[Drawing 5]



[Translation done.]

(11)特許出願公開番号

特開平7-80921

(43)公開日 平成7年(1995)3月28日

(51) Int.Cl.⁸

識別記号

室内整理番号

FI

技術表示箇所

B 2 9 C 49/20

7619-4F

49/08

7619-4F

B 6 5 D 23/10

A

// B 2 9 K 105:20

B 2 9 L 22:00

審査請求 未請求 請求項の数2 OL (全 5 頁)

(21)出願番号

特願平5-231376

(22) 出願日

平成5年(1993)9月17日

(71)出願人 000003193

凸版印刷株式会社

東京都台東区台東1丁目5番1号

(72) 発明者 柿木 典一

東京都台東区台東一丁目5番1号 凸版印刷株式会社内

(72)発明者 斎藤 剛史

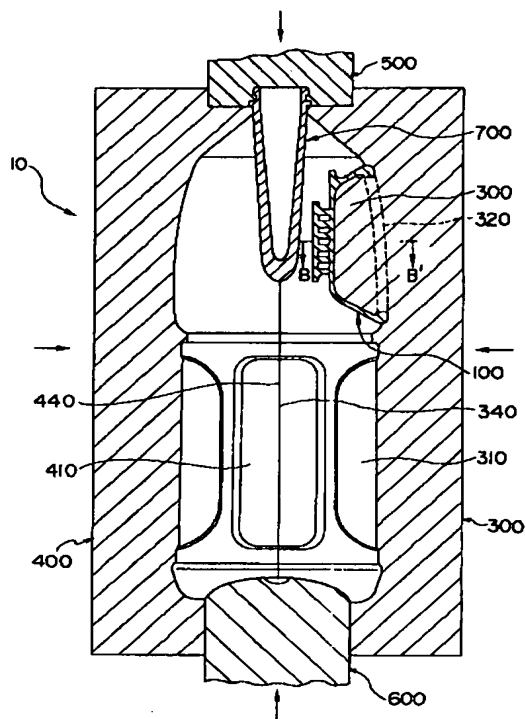
東京都台東区台東一丁目5番1号 凸版印刷株式会社内

(54)【発明の名称】 把手付二軸延伸ブロー成形ボトルの製造方法及び把手

(57) 【要約】

【目的】量産時の成形安定性が良く、把手使用時に外れる危惧がなく、しかも外観が良好な把手付二軸延伸ブロー成形ボトルの製造方法を提供する。

【構成】ボトル本体に別体の把手をインサート成形する二軸延伸ブロー成形法において、ボトル本体に嵌着する嵌合子と金型の位置決めピンが嵌通する位置決め孔をもつ把手部とからなる別体の把手を、二軸延伸ブロー成形金型の胴部金型キャビティ面の、突起する位置決めピンと位置ずれ防止凹部とをもつ把手装着凹部に装着してのち、ボトル本体を二軸延伸ブロー成形して把手付二軸延伸ブロー成形ボトルを製造する。



【特許請求の範囲】

【請求項 1】 ボトル本体に別体の把手をインサート成形する二軸延伸ブロー成形法において、ボトル本体に嵌着する嵌合子と金型の位置決めピンが嵌通する位置決め孔をもつ把手部とからなる別体の把手を、二軸延伸ブロー成形金型の胴部金型キャビティ面の、突起する位置決めピンと位置ずれ防止凹部とをもつ把手装着凹部に装着してのち、ボトル本体を二軸延伸ブロー成形することを特徴とする把手付二軸延伸ブロー成形ボトルの製造方法。

【請求項 2】 請求項 1 に記載の把手付二軸延伸ブロー成形ボトルの製造方法に用いる、ボトル本体に嵌着する嵌合子と、金型の位置決めピンが嵌通する位置決め孔をもつ把手部とを有することを特徴とする把手。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 本発明は、果汁飲料、液体調味料、液体洗剤及び現像液などの液体内容物に使用される把手付二軸延伸ブロー成形ボトルの製造方法に関するものである。

【0002】

【従来の技術】 最近、プラスチック製ボトルは、液体内容物の容器として適用範囲を拡大するにつれて内容量も大きくなり、1リットル以上の把手付ボトルの需要が増えてきている。プラスチック製ボトルに把手を付ける方法としては、従来から、ブロー成形法では、ボトルの成形時にボトル胴部の一部を凹部に形成して把手状にしたもの、把手内側のパリソン（溶融管状の成形材料）を押し潰して成形し、この押し潰した把手の内側を切り取って把手を形成したもの、または、実開平 1-137831 号公報などで開示されたように、ボトル胴部に嵌合凸部を形成し、この凸部に把手を嵌合係止する方法や、さらには、特開昭 63-95931 号公報などで開示されたように、プリフォーム（加熱した有底パリソン）と別体の把手とを予め正しく隣接保持しておき、両者を同時に二軸延伸ブロー成形用金型内に搬送して把手付二軸延伸ブロー成形ボトルを成形するものであった。

【0003】

【発明が解決しようとする課題】 しかしながら、ボトル胴部の一部を凹部に形成して把手状にしたボトルは、使用時に持ちにくく、また、表面が滑り易い問題があった。把手内側を潰して成形し切り取って把手を形成した把手付きボトルは、材質にポリエチレンテレフタレートなどをを用いた延伸ブロー成形法によるボトルでは、成形法の形状の制約と把手内部に出来るピンチオフ（溶融したパリソンの食い切り部の外縁の融着部）の融着不十分のため、適用することが無理であった。また、実開平 1-137831 号公報などで開示されたボトル胴部に嵌合凸部を形成して把手を嵌合係止する方法は、ボトル胴部の嵌合凸部をしっかりと形成することに成形上の難しさがあ

10

り、使用時に把手が外れる危険があった。また、特開昭 63-95931 号公報で開示されたパリソンと別体の把手を同時に二軸延伸ブロー成形用金型内に搬送して把手付二軸延伸ブロー成形ボトルを成形する方法は、別体の把手を金型キャビティ面にパーティングラインを跨がらせて装着するため、成形されたボトルの正面側に縦方向のパーティングライン跡が残り、ボトルの外観を損なうものであった。本発明は、量産時の成形安定性が良く、把手使用時に外れる危険がなく、しかもボトル正面側にパーティングライン跡がなく外観が良好な把手付二軸延伸ブロー成形ボトルの製造方法を提供するものである。

【0004】

【課題を解決するための手段】 第 1 の本発明は、ボトル本体に別体の把手をインサート成形する二軸延伸ブロー成形法において、図 1 に示すように、ボトル本体に嵌着する嵌合子（120）と金型の位置決めピンが嵌通する位置決め孔（130）をもつ把手部（110）とからなる別体の把手（100）を、図 2 に示すように、二軸延伸ブロー成形金型の胴部金型（300）キャビティ面（310）の、突起する位置決めピン（330）と位置ずれ防止凹部（321、図 4 に示す）とをもつ把手装着凹部（320）に装着してのち、図 5 に示すように、ボトル本体（210）を二軸延伸ブロー成形することを特徴とする把手付二軸延伸ブロー成形ボトル（200）の製造方法である。

20

【0005】 第 2 の本発明は、第 1 の本発明の把手付二軸延伸ブロー成形ボトルの製造方法に用いる、ボトル本体に嵌着する嵌合子と、金型の位置決めピンが嵌通する位置決め孔をもつ把手部とを有することを特徴とする把手である。

30

【0006】 上述の二軸延伸ブロー成形金型（10）は、図 3 に示すように、通常、二つに分割する胴部金型（300、400）と頸部金型（500）と底部金型（600）とから構成され、頸部金型に加熱したプリフォーム（700）を吊着して型締めされるものである。このプリフォームは、型締めされた二軸延伸ブロー成形金型内で、延伸ロットで縦方向に延伸されたのち、プリフォーム内にエアが吹き込まれてボトルに成形されるものである。なお、二軸延伸ブロー成形に使用される成形材料は、ポリエチレンテレフタレート、アクリロニトリル系樹脂、ポリプロピレン、ポリ塩化ビニル、ポリ塩化ビニリデンなどである。

40

【0007】 また、別体の把手の胴部金型キャビティ面の把手装着凹部への装着は、インサーターで機械的に行っても、手で人的に行っても良い。そして、把手の形状によっては、図 4 に示すようなバキューム孔（380）を把手装着凹部（320）の適切な位置に設けて、別体の把手を吸引して、成形時の把手の位置ずれを防いでも良い。

50

【0008】 また、別体の把手のボトル本体との固着性

は、ボトル本体の周壁と把手の嵌合子との嵌合によって得られるが、必要に応じては、嵌合子以外の把手のボトル本体の周壁との接触部に嵌合突起や嵌合部を設けても良い。なお、嵌合子のボトル本体の周壁との嵌合部は、嵌合子の上下左右（把手をボトルに取り付けた状態で）の四方に必要個数だけ設けるものである。

【0009】そして、別体の把手の材質は、ボトル本体との熱融着性や使用後の分別回収を考慮すると、ボトル本体の材質と同系統の樹脂が好ましいが、他の材質を使用しても良い。

【0010】

【作用】本発明の把手付二軸延伸ブロー成形ボトルの製造方法においては、別体の把手が、胴部金型内の把手装着凹部の位置決めピンと位置ずれ防止凹部とに嵌着するため、正確な位置にしっかりと装着され、しかも、位置決めピンの先端で把手の嵌合子の背面を支持しており、ボトル本体の成形時に位置ずれを生じたり、ブロー圧によって変形することが極めて少なくなる。

【0011】また、把手のボトル本体の周壁側に嵌合子が形成されており、この嵌合子の上下左右（把手をボトルに取り付けた状態で）の四方方向の複数の嵌合部とボトル本体の周壁とがしっかりと嵌合しているため、別体の把手のボトル本体の周壁との固着性が極めて良好となる。このため、ボトルの使用中に、把手がボトルから外れたり、ぐらつくことが防げる。

【0012】また、胴部金型のキャビティ中央部の所定位置に形成された把手装着凹部に、別体の把手が装着されてボトル本体が成形されるため、成形された把手付二軸延伸ブロー成形ボトルの胴部金型のパーティングラインの跡は、把手取付け側をボトルの裏面側とすると、ボトル胴部の左右側面に形成され、表面側のボトル胴部にはパーティングラインの跡はない。

【0013】

【実施例】まず、本実施例に係わる別体の把手を作製するために、図1に示すボトル本体に嵌着する嵌合子（120）と金型の位置決めピンが嵌通する位置決め孔（130）をもつ把手部（110）と嵌合突起（140）とからなる別体の把手（100）を、インジェクション成形機でポリエチレンテレフタレートを用いて作製した。

【0014】次に、図2（a）に示すように、二軸延伸ブロー成形金型の裏面側胴部金型（300）のキャビティ（310）の上方中央に設けられた、突起する位置決めピン（330）と位置ずれ防止凹部（321、図4に示す）とをもつ把手装着凹部（320）に、図2（b）に示すように、作製した別体の把手（100）を装着した。なお、この把手装着凹部には、さらに図4に示すようなバキューム孔（380）を設けて、成形時に把手が位置ずれを起こさないように吸着した。また、嵌合子（120）の背面を位置決めピン（130）の先端で支持し、成形中のブロー圧による変形を防いだ。

【0015】次に、図3に示すように、頸部金型に加熱したプリフォームを吊着して型締を行い、プリフォームを延伸ロットで縦方向に延伸し、図5に示すように、ボトル本体（210）をブロー成形して把手付二軸延伸ブロー成形ボトル（200）を作製した。なお、この本実施例の把手付二軸延伸ブロー成形ボトルの製造方法で、連続して把手付二軸延伸ブロー成形ボトルを作製してみたが、連続成形性は良好であった。

【0016】作製した把手付二軸延伸ブロー成形ボトルを評価するために、40℃の充填温度で温水を充填して注出口をキャップで密封し、冷却後、通常の流通過程を経て後に、図6に示すように、ボトルの把手（100）の指挿入凹部に右手の人指し指（910）、中指（920）、薬指（930）、小指（940）を挿入し、親指とで把手を掴んでボトルを持って振ったり、開栓して、内容物を排出したりしてみたが、把手の嵌合子の嵌合部とボトル周壁とがしっかりと嵌合し、把手にガタを生じたり、外れることはなかった。また、成形時に形成されるパーティングライン跡が、ボトルの正面側にならないため、ボトルの外観が良好であった。

【0017】

【発明の効果】本発明の把手付二軸延伸ブロー成形ボトルの製造方法によると、嵌合子と位置決め孔とをもつ別体の把手が胴部金型のキャビティ面の指定位置の把手装着凹部に、位置決めピンと位置ずれ防止凹部とで、しっかりと装着されてボトル本体の成形と同時に一体成形されて把手付二軸延伸ブロー成形ボトルが製造されるため、量産時の成形安定性が良く、しかも、製造されたボトルは、使用時に把手が外れる危険がなく、そのうえ、ボトル正面側に胴部金型のパーティングライン跡がなので、外観が極めて良好である。

【図面の簡単な説明】

【図1】（a）は、実施例の把手の断面図であり、（b）は、把手の平面図であり、（c）は、把手の底面図であり、（d）は、把手のA-A'断面図である。

【図2】実施例における把手取付け側の二軸延伸ブロー成形金型の平面図であり、（a）は、把手を金型内に装着していない状態を示し、（b）は、把手を金型内の把手装着凹部に装着した時の状態を示している。

【図3】実施例における二軸延伸ブロー成形金型内に、プリフォームと別体の把手とを装着した状態を示す断面図である。

【図4】図3におけるB-B'断面図である。

【図5】二軸延伸ブロー成形金型内でプリフォームを延伸ブローして、実施例の把手付二軸延伸ブロー成形ボトルを成形した状態を示す断面図である。

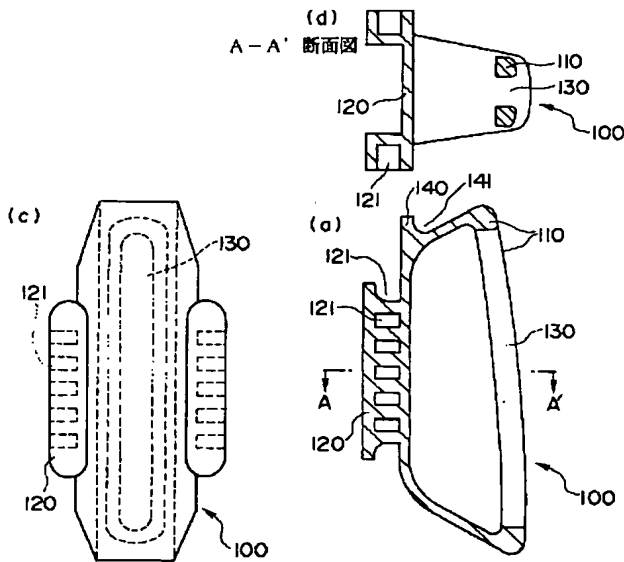
【図6】実施例の把手付二軸延伸ブロー成形ボトルの把手に右手の指を入れて、ボトルを傾斜し、ボトルから内容物を注出しようとする状態を示す説明図である。

【符号の説明】

5

- 10……二軸延伸ブロー成形金型
- 100……把手
- 110……把手部
- 120……嵌合子
- 121, 141……嵌合部
- 130……位置決め孔
- 140……嵌合突起
- 200……把手付二軸延伸ブロー成形ボトル
- 210……ボトル本体
- 220……周壁
- 230……パーティングライン跡
- 300, 400……胴部金型
- 310, 410……キャビティ
- 320……把手装着凹部

【図1】

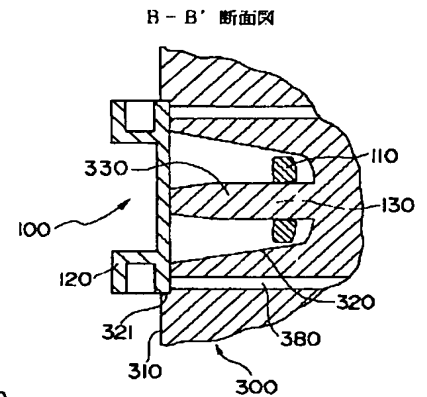


6

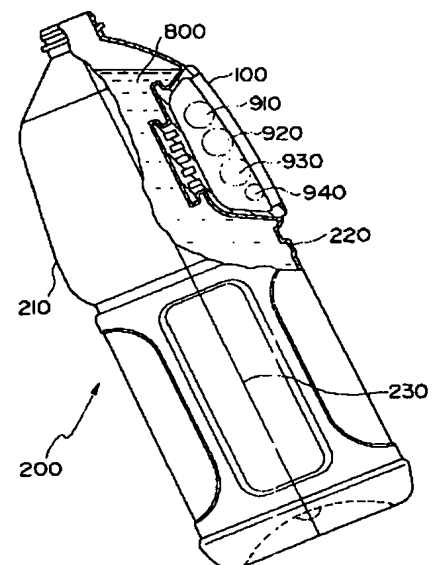
- * 330……位置決めピン
- 340, 440……パーティング面
- 350……頸部金型嵌合凹部
- 360……底部金型嵌合凹部
- 370……ガイドピン
- 500……頸部金型
- 600……底部金型
- 700……プリフォーム
- 800……内容物
- 910……人指し指
- 920……中指
- 930……薬指
- 940……小指

*

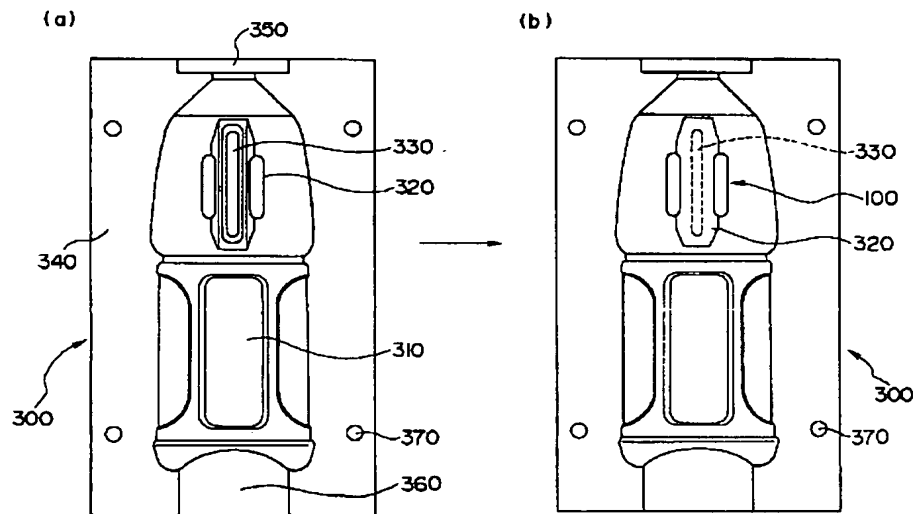
【図4】



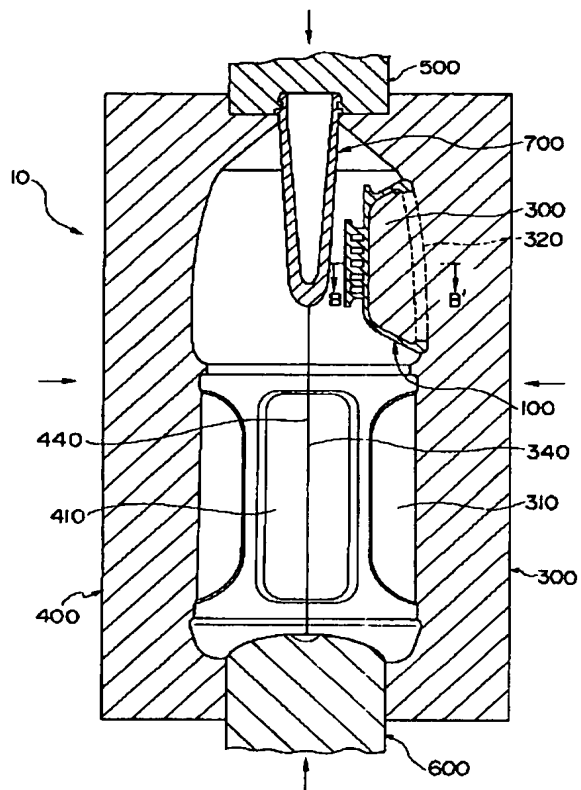
【図6】



【図2】



【図3】



【図5】

